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| 10/726,456 | 12/02/2003 | Marcello Lioy | 030130 | 6751 |

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| EXAMINER |
|---|
| NGUYEN, PHUONGCHAU BA |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<table>
<tr><td rowspan="2"><b>Office Action Summary</b></td><td><b>Application No.</b></td><td><b>Applicant(s)</b></td></tr>
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-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>02 December 2003</u>.

2a)☐ This action is **FINAL**.  2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-32</u> is/are rejected.

7)☒ Claim(s) <u>30</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 December 2003</u> is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All  b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

## *Claim Objections*

1.    Claim 30 is objected to because of the following informalities: line 4,

"the plurality of communication network" should be changed to --- the plurality

of communication networks---.  Appropriate correction is required.

## *Claim Rejections – 35 USC § 102*

2.    The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section
> 122(b), by another filed in the United States before the invention by the applicant for patent
> or (2) a patent granted on an application for patent by another filed in the United States
> before the invention by the applicant for patent, except that an international application filed
> under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application
> designated the United States and was published under Article 21(2) of such treaty in the
> English language.

3.    Claims 1–9, 11–32 are rejected under 35 U.S.C. 102(e) as being

anticipated by Linder (US 2004/0176023).

Regarding claims 1 & 17,

Linder discloses a method of supporting communication with a plurality

of communication networks of different link-layer technologies, comprising:

receiving a first Internet Protocol (IP) packet at a logical interface (mobile

node 10-fig.1 receiving IP packets having IP address as logical interface at

module 13);

processing the first IP packet in accordance with a configuration for the

logical interface (mobile node 10-fig.1 receiving IP packets via interfaces 14-

17);

determining a first physical interface (i.e., physical interface 14-fig.1) as

being associated with the logical interface (mobile module 13-fig.1), wherein

the first physical interface is one of a plurality of physical interfaces (physical

interfaces 14-17, fig.1, see 0025) for the plurality of communication networks

(networks 21-24, fig.1), and wherein the logical interface (mobile module 13-

fig.1) is configurable for association with any one of the plurality of physical

interfaces (physical interfaces 14–17, fig.1); and

passing the processed first IP packet to the first physical interface (fig.1

wherein mobile IP transmitted/received IP packets via one of the physical

interface 14–fig.1).

Regarding claim 2, Linder further discloses wherein the plurality of

communication networks are wireless communication networks of different

wireless technologies (plurality of networks 21–24, fig.1, see 0025).

Regarding claim 3, Linder further discloses wherein the first physical interface

(i.e., physical interface 14–fig.1) is for a first communication network (i.e.,

network 21–fig.1) among the plurality of communication networks (networks

21–24), and wherein the logical interface (mobile module 13–fig.1)is associated

with the first physical interface for communication with the first communication

network.


Regarding claim 4, Linder further discloses wherein the logical interface (mobile

module 13-fig.1) is associated with an IP address (IP address of the

topologically current network location, 0031) that remains unchanged

regardless of which one of the plurality of physical interfaces is associated with

the logical interface (mobile module 13-fig.1; also see 0025 & 0031 & figs.1-3,

i.e., the IP address of mobile node is unchanged regardless of which one of the

physical interfaces that the mobile node associated with-emphasis added).


Regarding claim 5, Linder further discloses wherein the first IP packet includes

the IP address of the logical interface (mobile module 13-fig.1) as a source

address (see 0031 wherein source of address 82-figs.2-3 indicating the IP

address of the sender).

Regarding claim 6, Linder further discloses wherein the processing includes

encapsulating the first IP packet with the IP address of the logical interface

(mobile module 13-fig.1; see also 0028 & 0031 wherein the old address 82/83

is encapsulated with new IP header having care of address as the destination

address).

Regarding claim 7, Linder further discloses wherein the configuration for the

logical interface (mobile module 13-fig.1) is dependent on a particular one of

the plurality of physical interfaces (physical interfaces 14-17) associated with

the logical interface (i.e., IP address of the topologically current network

address, see 0031).

Regarding claim 8, Linder further discloses (mobile node 10-fig.1) receiving a

second IP packet (IP packets, i.e., second IP packet) at the logical interface;

processing the second IP packet in accordance with the configuration for the

logical interface (mobile module 13-fig.1); determining a second physical

interface as being associated with the logical interface (mobile module 13-

fig.1), wherein the second physical interface (i.e., physical interface 15-fig.1) is

another one of the plurality of physical interfaces (physical interfaces 14-17);

and passing the processed second IP packet to the second physical interface

(passing the second IP packet to network 22 via physical interface 16-fig.1,

emphasis added).


Regarding claim 9, Linder further discloses wherein the second physical

interface is for a second communication network (network 22-fig.1) among the

plurality of communication networks (networks 21-24, fig.1), and wherein the

logical interface (mobile module 13-fig.1; i.e., IP address of the topologically

current network location, 0031) is associated with the second physical interface

(physical interface 15-fig.1) for communication with the second communication

network (network 22-fig.1).

Regarding claim 11, Linder further discloses wherein the plurality of

communication networks include a W-CDMA wireless communication network

(UMTS network, see 0025).

Regarding claim 12, Linder further discloses wherein the plurality of

communication networks include an IEEE 802.11-based wireless network

(Bluetooth network 22, see 0025).

Regarding claims 13 & 28,

Linder discloses an apparatus operable to support communication with a

plurality of communication networks of different link-layer technologies,

comprising:

a first physical interface (physical interface 14-fig.1) operative to perform

technology-dependent processing for a first communication network (network

21-fig.1) among the plurality of communication networks (networks 21-24, fig.1);

a second physical interface (physical interface 15-fig.1) operative to perform technology-dependent processing for a second communication network (network 22-fig.1) among the plurality of communication networks (networks 21-24, fig.1); and

a logical interface (mobile module 13, fig.1, 0025) operative to receive and process a first Internet Protocol (IP) packet (IP packets, 0025) in accordance with a configuration for the logical interface , determine that the first physical interface (physical interface 14-fig.1) is associated with the logical interface (mobile module 13-fig.1), and pass the processed first IP packet to the first physical interface (physical interface 14-fig.1), wherein the logical interface (mobile module 13-fig.1, 0025) is configurable for association with either the first or second physical interface (physical interfaces 14-17, fig.1).

Regarding claim 14, Linder further discloses  wherein the logical interface

(mobile module 13-fig.1) is further operative to receive and process a second IP

packet (IP packets, 0025) in accordance with the configuration for the logical

interface (mobile module 13-fig.1), determine that the second physical

interface (physical interface 15-fig.1) is associated with the logical interface,

and pass the processed second IP packet to the second physical interface (see

0025-0029).


Regarding claim 15, Linder further discloses wherein the logical interface

(mobile module 13-fig.1) is associated with an IP address (IP address of the

topologically current network location, 0031) that remains unchanged

regardless of whether the first or second physical interface is associated with

the logical interface (mobile module 13-fig.1; also see 0025 & 0031 & figs.1-3,

i.e., the IP address of mobile node is unchanged regardless of which one of the

physical interfaces that the mobile node associated with-emphasis added), and

wherein the first IP packet includes the IP address of the logical interface

(mobile module 13-fig.1) as a source address (see 0031 wherein source of

address 82-figs.2-3 indicating the IP address of the sender).

Regarding claim 16, Linder further discloses a Mobile IP module (mobile module

13-fig.1) operative to configure the logical interface and associate the logical

interface with either the first or second physical interface (physical interfaces

14-17, fig.1).

Regarding claim 18,

Linder further discloses implementation of mobile node 10 having the

infrastructure including hardware and software in 0025 paragraph for the

processor readable media for storing instructions operable in a wireless device

to:

receive an Internet Protocol (IP) packet at a logical interface (mobile node

10-fig.1 receiving IP packets having IP address as logical interface at module

13);

process the IP packet in accordance with a configuration for the logical

interface (mobile node 10-fig.1 receiving IP packets via interfaces 14-17);

determine a physical interface (i.e., physical interface 14-fig.1) associated

with the logical interface (mobile module 13-fig.1), wherein the physical

interface is one of a plurality of physical interfaces (physical interfaces 14-17,

fig.1, see 0025) for a plurality of communication networks (networks 21-24,

fig.1) with different link-layer technologies (figs. 6-9), and wherein the logical

interface (mobile module 13-fig.1) is configurable for association with any one

of the plurality of physical interfaces (physical interfaces 14-17, fig.1); and

pass the processed IP packet to the physical interface (fig.1 wherein

mobile IP transmitted/received IP packets via one of the physical interface 14-

fig.1).

Regarding claims 19 & 29,

Linder discloses a method of supporting communication with a plurality of communication networks of different link-layer technologies, comprising:

receiving an Internet Protocol (IP) packet at a physical interface (physical interface 14-fig.1), wherein the physical interface is one of a plurality of physical interfaces (physical interfaces 14-17, fig.1) for the plurality of communication networks (networks 21-24, fig.1);

processing the IP packet in accordance with a configuration for the physical interface (processing and redirecting IP packets for physical interface 14-fig.1);

determining at least one logical interface (NNA, L2-figs.6-9) associated with the physical interface (L1 physical wireless), wherein each of the at least one logical interface is associated with a respective IP address (L2 address) and

is configurable for association with any one of the plurality of physical

interfaces (L1-figs. 6-9);

querying (querying is inherent in the determining process-emphasis

added) the at least one logical interface (NNA, L2, figs. 6-9); and

passing the processed IP packet to a selected logical interface (i.e., L2

address of the IP address of the topologically current network location, 0031)

among the at least one logical interface if a response to the query (IP address)

is received.

Regarding claim 20, Linder further discloses passing the processed IP packet to

an IP layer (layer 3 having L3 address) if the response to the query is not

received (see fig.7 and 0034).

Regarding claim 21, Linder further discloses wherein the IP address (IP address

of the topologically current network location, 0031) for each of the at least one

logical interface (mobile module 13-fig.1) remains unchanged regardless of

which one of the plurality of physical interfaces is associated with the logical

interface (mobile module 13-fig.1; also see 0025 & 0031 & figs.1-3, i.e., the IP

address of mobile node is unchanged regardless of which one of the physical

interfaces that the mobile node associated with-emphasis added).


Regarding claim 22, Linder further discloses determining one or more

candidate logical interfaces (mobile module 13), from among the at least one

logical interface, for potentially processing the IP packet, and wherein the one

or more candidate logical interfaces are queried (figs. 6-9 wherein mobile node

10 determined to redirect IP packets to the corresponding logical interface that

associating with the corresponding physical interface, emphasis added, see also

0025 & fig.1).

Regarding claims 23-24, Linder further discloses wherein the one or more

candidate logical interfaces (mobile module 13-fig.1) are determined based on

an IP address of the IP packet and the IP address of each of the at least one

logical interface queried (figs. 6-9 wherein mobile node 10 determined the IP

address of IP packets to redirect IP packets to the corresponding logical

interface that associating with the corresponding physical interface, emphasis

added, see also 0025 & fig.1).

Regarding claim 25, Linder further discloses (mobile module 13-fig.1) receiving

a response to the query from one of the at least one logical interface (i.e., L2

address to L1 wireless), and wherein the selected logical interface is the one

logical interface with the response queried (figs. 6-9 wherein mobile node 10

determined to redirect IP packets to the corresponding logical interface that

associating with the corresponding physical interface, emphasis added, see also

0025 & fig.1).

Regarding claim 26, Linder further discloses (mobile module 13-fig.1) receiving

responses to the query from at least two logical interfaces (i.e., L2 address to

L1 wireless or radio) among the at least one logical interface; and selecting one

logical interface among the at least two logical interfaces as the selected logical

interface queried (figs. 6-9 wherein mobile node 10 determined to redirect IP

packets to the corresponding logical interface that associating with the

corresponding physical interface, emphasis added, see also 0025 & fig.1).

Regarding claim 27, Linder further discloses wherein the one logical interface

(i.e., L2 address to L1 wireless) is selected based on the IP address of the one

logical interface queried (figs. 6-9 wherein mobile node 10 determined to

redirect IP packets to the corresponding logical interface that associating with

the corresponding physical interface, emphasis added, see also 0025 & fig.1).

Regarding claims 30 & 32,

Linder discloses a method of supporting communication with a plurality

of communication networks of different link-layer technologies, comprising:

identifying a physical interface currently active (i.e., the physical interface

associated with the IP address as active physical interface–emphasis added) and

used for communication with a communication network among the plurality of

communication networks (emphasis corrected the plurality of networks)

(networks 21–24, fig.1), wherein the physical interface is one of a plurality of

physical interfaces (physical interfaces 14–17, fig.1) for the plurality of

communication networks (networks 21–24, fig.1);

determining capabilities of the physical interface (determining which the

physical interface is capable of transporting the IP packet having the IP address

of the topologically current network location, 0031–emphasis added);

configuring a logical interface to perform processing for Internet Protocol

(IP) packets based on the determined capabilities of the physical interface (i.e.,

selecting physical interface 14–emphasis added); and

associating the logical interface (mobile module 13-fig.1) with the

physical interface (mobile module 13 associating with physical interface by

selecting the physical interface 14-fig.1-emphasis added).

Regarding claim 31, Linder further discloses wherein the capabilities of the

physical interface is dependent on the communication network for which the

physical interface is used for communication (determining which the physical

interface is capable of transporting the IP packet having the IP address of the

topologically current network location, 0031-emphasis added).

## *Claim Rejections - 35 USC § 103*

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains.  Patentability shall not be negatived by
> the manner in which the invention was made.

5.      Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Linder as applied to claim 1 above, and further in view of Chiayee (US

2006/0036365A1).

Regarding claim 10, Linder does not explicitly disclose wherein the plurality of

communication networks include a cdma2000 wireless communication network

(claim 10).

However, in the same field of endeavor, Chiayee discloses CDMA2000

networks as cellular communication networks (0038).  Therefore, it would have

been obvious to implement Chiayee's teaching of cellular communication

networks to Linder's wireless networks to accommodate for different standards

of more wireless communication protocols.  This is a common practice in the

art.

6.    Any inquiry concerning this communication or earlier communications

from the examiner should be directed to PHUONGCHAU BA NGUYEN whose

telephone number is (571)272-3148.  The examiner can normally be reached

on Monday–Friday from 7:30 a.m. to 4:00 p.m..

        If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Ricky Ngo can be reached on 571-272-3139.  The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHUONGCHAU BA NGUYEN/                     /Ricky Ngo/
Examiner, Art Unit 2416                    Supervisory Patent Examiner,
                                           Art Unit 2416